

AMENDMENT AND RESPONSE TO RESTRICTION REQUIREMENT

U.S. Patent Application Serial No.: 10/764,246

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AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in this application. Claims 2-3, 5, 7, 17-19, 23-31, 34, and 38-40 are amended herein, and new Claims 42-45 are presented.

Listing of Claims

1. (original) A priming mixture for small arms ammunition comprising:
 - a primary explosive; and
 - a non-hygroscopic, non-corrosive oxidizer system comprising bismuth oxide.
2. (currently amended) The priming mixture of claim 1, wherein the primary explosive comprises a compound selected from trinitroresorcinol, dinitrobenzofuroxan, diazodinitrophenol and, or combinations thereof.
3. (currently amended) The priming mixture of claim 1, wherein the oxidizer system further comprises a secondary oxidizer selected from potassium nitrate, zinc peroxide, manganese dioxide, molybdenum trioxide, strontium nitrate, strontium peroxide, tin oxide, iron oxide and, or combinations thereof.
4. (original) The priming mixture of claim 1, and further comprising a gas producing agent.
5. (currently amended) The priming mixture of claim 4, wherein the gas producing agent is selected from pentaerythritol tetranitrate, trinitrotoluene and, or combinations thereof.
6. (original) The priming mixture of claim 1, and further comprising a reducing agent.

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7. (currently amended) The priming mixture of claim 6, wherein the reducing agent is selected from aluminum, boron, calcium silicide, magnesium, magnesium-aluminum alloy, silicon, titanium, tungsten, zirconium, nitrocellulose and or combinations thereof.

8. (original) The priming mixture of claim 1, wherein the priming mixture is substantially free of lead.

9. (original) The priming mixture of claim 1, wherein the priming mixture is non-toxic.

10. (original) A small arms ammunition cartridge comprising:
a case; and,
the priming mixture of claim 1 disposed in the case.

11. (original) A priming mixture for small arms ammunition comprising:
about 20% to about 70% by weight of a primary explosive;
about 10% to about 70% by weight of an oxidizer system comprising bismuth oxide;
about 0% to about 25% by weight of a gas producing agent;
about 0% to about 20% by weight of a sensitizer; and,
about 0% to about 20% by weight of a reducing agent.

12. (original) The priming mixture of claim 11, wherein the priming mixture comprises about 25% to about 50% by weight of the primary explosive.

13. (original) The priming mixture of claim 11, wherein the priming mixture comprises about 25% to about 55% by weight of the oxidizer system.

14. (original) The priming mixture of claim 11, wherein the priming mixture comprises about 5% to about 25% by weight of the gas producing agent.

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15. (original) The priming mixture of claim 11, wherein the priming mixture comprises about 5% to about 20% by weight of the sensitizer.

16. (original) The priming mixture of claim 11, wherein the priming mixture comprises about 5% to about 20% by weight of the reducing agent.

17. (currently amended) The priming mixture of claim 11, wherein the primary explosive comprises a compound selected from trinitroresorcinol, diazodinitrophenol, dinitrobenzofuroxan and , or combinations thereof.

18. (currently amended) The priming mixture of claim 11, wherein the oxidizer system further comprises a secondary oxidizer selected from potassium nitrate, zinc peroxide, manganese dioxide, molybdenum trioxide, strontium nitrate, strontium peroxide, barium nitrate, tin oxide, iron oxide and , or combinations thereof.

19. (currently amended) A The priming mixture of claim 11, wherein the oxidizer system is non-hygroscopic.

20. (original) The priming mixture of claim 11, wherein the priming mixture is substantially free of lead.

21. (original) The priming mixture of claim 11, wherein the priming mixture is non-toxic.

22. (original) A small arms ammunition round comprising:

a priming mixture as disclosed in claim 11;
a propellant adapted to be initiated by the priming mixture; and
a projectile.

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23. (currently amended) A method of making a priming mixture for small arms ammunition comprising:

~~forming an aqueous priming mixture by combining and mixing water with, combining on~~ a dry weight percent the following components:

about 20% to about 70% by weight of a primary explosive;

about 10% to about 70% by weight of an oxidizer system comprising bismuth oxide;

about 0% to about 25% by weight of a gas producing agent;

about 0% to about 20% by weight of a sensitizer; and,

about 0% to about 20% by weight of a reducing agent.

24. (currently amended) The method of making the priming mixture of claim 23 42, further comprising pelletizing the aqueous priming mixture.

25. (currently amended) The method of making the priming mixture of claim 24, further comprising charging a percussion cup with the ~~palletized~~ pelletized priming mixture to form a charged percussion cup.

26. (currently amended) A method of making a priming mixture for small arms ammunition comprising combining the following components:

~~forming an aqueous priming mixture by combining and mixing water with,~~

a primary explosive; and,

a non-hygroscopic, non-corrosive oxidizer system comprising bismuth oxide.

27. (currently amended) The method of making the priming mixture of claim 26 43, further comprising pelletizing the aqueous priming mixture.

28. (currently amended) The method of making the priming mixture of claim 27, further comprising charging a percussion cup with the ~~palletized~~ pelletized priming mixture to form a charged percussion cup.

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29. (currently amended) The method of making the priming mixture of claim 26 43, further comprising combining and mixing a sensitizer with the aqueous priming mixture.

30. (currently amended) The method of making the priming mixture of claim 26 43, further comprising combining and mixing a reducing agent with the aqueous priming mixture.

31. (currently amended) The method of making the priming mixture of claim 26 43, further comprising combining and mixing a gas producing agent with the aqueous priming mixture.

32. (original) A priming mixture for small arms ammunition comprising:

about 25% to about 50% by weight of a primary explosive; and,

about 25% to about 55% by weight of an oxidizer system comprising bismuth oxide.

33. (original) The priming mixture of claim 32, further comprising about 5% to about 25% by weight of a gas producing agent.

34. (currently amended) The priming mixture of claim 33, wherein the gas producing agent is selected from pentaerythritol tetranitrate, trinitrotoluene and or combinations thereof.

35. (original) The priming mixture of claim 32, further comprising about 5% to about 20% by weight of a sensitizer.

36. (original) The priming mixture of claim 35, wherein the oxidizer system is non-corrosive and non-hygroscopic.

37. (original) The priming mixture of claim 32, further comprising about 5% to about 20% by weight of the reducing agent.

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38. (currently amended) The priming mixture of claim 37, wherein the reducing agent is selected from aluminum, boron, calcium silicide, magnesium, magnesium-aluminum alloy, silicon, titanium, tungsten, zirconium and , or combinations thereof.

39. (currently amended) The priming mixture of claim 32, wherein the primary explosive comprises a compound selected from trinitroresorcinol, dinitrobenzofuroxan, diazodinitrophenol and , or combinations thereof.

40. (currently amended) The priming mixture of claim 32, wherein the oxidizer system further comprises an oxidizer selected from potassium nitrate, zinc peroxide, manganese dioxide, molybdenum trioxide, strontium nitrate, strontium peroxide, barium nitrate, tin oxide, iron oxide and , or combinations thereof.

41. (original) The priming mixture of claim 32, wherein the priming mixture is substantially free of lead.

42. (new) The method of making the priming mixture of claim 23, further comprising forming an aqueous priming mixture by combining and mixing water with the recited components.

43. (new) The method of making the priming mixture of claim 26, further comprising forming an aqueous priming mixture by combining and mixing water with the recited components.

44. (new) The priming mixture of claim 1, further comprising a sensitizer.

45. (new) The priming mixture of claim 44, wherein the sensitizer is tetrazene.